Genetic Clue Tied to Nev. Cancer Cluster

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FALLON, Nev. -- Children in a northern Nevada leukemia cluster are more likely to have a variation in a gene that helps combat unsafe chemicals, and more research is needed to learn why, federal researchers said Thursday.

The study released by the Centers for Disease Control and Prevention is the latest to suggest genetics and toxins play a role in the cancer cluster plaguing the agricultural community.

Since 1997, 17 children with ties to Fallon have been diagnosed with acute lymphocytic leukemia. Three have died. Health officials say about one leukemia case in five years would be expected.

"All we can say is we saw a difference but we don't know what that means yet. The significance is that researchers need to investigate this," said Dr. Karen Steinberg, chief science officer of the CDC's Coordinating Center for Health Promotion.

"It might mean that it alters susceptibility (to leukemia) but it doesn't cause leukemia," she said at a media briefing Wednesday, adding there would have to be other factors to alter susceptibility.

An earlier study headed by CDC failed to find an environmental cause for the cluster. It found Fallon-area residents had higher levels of tungsten and arsenic in their blood and urine, but there was no evidence the substances caused leukemia.

The latest DNA study revealed that all 11 children with leukemia who were tested had a variation in the SUOX gene, which tells the body how to make sulfite oxidase. Sulfite oxidase is an enzyme that normally helps convert substances called sulfites to sulfate for excretion. Lack of this enzyme because of genetic defect can cause major neurological problems and early death.

By comparison, 10 of 24 healthy Fallon-area children who were tested had the gene variation. Sulfite oxidase changes an unsafe chemical into a safer one.

CDC officials said even if the variation in the SUOX gene adds to the risk for leukemia, other factors must be involved. Researchers have not identified those factors or the cause of the Fallon cluster, they said.

Scientists must determine the effect of variations in the SUOX gene and whether the variation affects the likelihood that a child will get leukemia, they added.

"The genetics test took it (research) to the next logical level and what we have to do is build on it," said Dr. Carol Rubin, chief of the CDC's health studies branch. "We're hoping this leads to other genetics research."

The call for more research was immediately embraced by incoming Senate Majority Leader Harry Reid, D-Nev.

"While the exact cause of the cancer cluster is still unknown, I remain committed to finding answers," Reid said.

Jeff Braccini of Fallon, whose 8-year-old son, Jeremy, was diagnosed with leukemia in 2001, said he was pleased with the CDC's latest study.

He's treasurer of Families in Search of Truth, which has secured $750,000 in federal funding through Reid's help for research projects.

"Any time we get sound science, I fully applaud it," Braccini said. "My goal now is to tie the CDC and what they have done into our grant process that we have going on."

Richard Jernee of College Place, Wash., whose 10-year-old son, Adam, became the first child to die in the cluster in 2001, said CDC waited too long to do DNA testing.

"It should have been conducted right away," he said. "I certainly hope it can be used as a stepping stone to get to the truth."

CDC officials insisted their work in Fallon reflects the most thorough study of any leukemia cluster in the nation. But they have no plans to take more samples in Fallon, they said.

"We're now waiting for results of outside research and we're working with researchers to look at larger groups of children with leukemia," Rubin said. "We're learning the pieces of the puzzle, but it's going to take a lot of research to unravel the mystery of pediatric leukemia."